

MULTIMEDIA



UNIVERSITY

STUDENT ID NO

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# MULTIMEDIA UNIVERSITY

## FINAL EXAMINATION

TRIMESTER 1, 2017/2018

**BAC3674 – ADVANCED MANAGEMENT ACCOUNTING**

( All sections / Groups )

12<sup>th</sup> OCTOBER 2017

9.00 AM – 12.00 PM

(3 Hours)

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### INSTRUCTIONS TO STUDENTS

1. This question paper consists of 6 pages (excluding cover page) with 4 questions only.
2. Attempt ALL FOUR questions. All questions carry equal marks and the distribution of the marks for each question is given.
3. Please write all your answer in the Answer Booklet provided.

**Question 1**

Apple Electronics manufactures two large screen television models, the Monalisa, which has been produced since 2005 and sells for RM900, and the Royal, a new model introduced in early 2015 that sells for RM1,140. Based on the following income statement for the year-ended November 30, 2016, senior management have decided to concentrate Apple's marketing resources on the Royal model and to phase out the Monalisa model.

**Apple Electronics Income Statement For the Fiscal Year Ended November 30, 2016**

	Monalisa	Royal	Total
Revenues	RM19,800,000	RM4,560,000	RM24,360,000
Cost of goods sold	12,540,000	3,192,000	15,732,000
Gross margin	7,260,000	1,368,000	8,628,000
Selling and administrative costs	5,830,000	978,000	6,808,000
Operating income	<b>RM1,430,000</b>	<b>RM 390,000</b>	<b>RM 1,820,000</b>
	=====	=====	=====
Units produced and sold	22,000	4,000	
Net income per unit sold	RM65.00	RM97.50	
	=====	=====	=====

Unit costs for Monalisa and Royal are as follows:

	Monalisa	Royal
Direct materials	RM208	RM584
Direct manufacturing labor		
Monalisa (1.5 hours X RM12)	18	
Royal (3.5 hours X RM12)		42
Machine costs <sup>a</sup>		
Monalisa (8 hours X RM18)	144	
Royal (4 hours X RM18)		72
Manufacturing overhead other than machine costs <sup>b</sup>	200	100
Total costs	<b>RM 570</b>	<b>RM 798</b>
	=====	=====

<sup>a</sup> Machine costs include lease costs of the machine, repairs and maintenance.

<sup>b</sup> Manufacturing overhead was allocated to products based on machine-hours at the rate of RM25 per hour

Apple's controller, Suzana, is advocating the use of activity-based costing (ABC) and activity-based management and has gathered the following information about the company's manufacturing overhead costs for the year ended November 30, 2016.

**Continued ...**

**Units of the Costs-Allocation Base**

Activity Center (Costs-Allocation Base)	Total Activity Costs (RM)	Monalisa	Royal	Total
Soldering (number of solder points)	RM 942,000	1,185,000	385,000	1,570,000
Shipments (number of shipments)	860,000	16,200	3,800	20,000
Quality control (number of inspections)	1,240,000	56,200	21,300	77,500
Purchase orders (number of orders)	950,400	80,100	109,980	190,080
Machine power (machine hours)	57,600	176,000	16,000	192,000
Machine setups (number of setups)	750,000	16,000	14,000	30,000
Total manufacturing overhead	<b>RM4,800,000</b>			

After completing her analysis, Suzana shows the results to Frederick, the Apple CEO. Frederick does not like what he sees. "If you show headquarters this analysis, they are going to ask us to phase out the Royal line, which we have just introduced. This whole costing stuff has been a major problem for us. First, Monalisa was not profitable and now Royal. Looking at the ABC analysis, I see two problems. First, we do many more activities than the ones you have listed. If you had included all activities, may be your conclusions would be different. Second, you used number of setups and number of inspections as allocation bases. The numbers would be different, had you used set-up hours and inspection-hours instead. I know that measurement problems precluded you from using these other cost allocation bases, but I believe that you ought to make some adjustments to our current numbers to compensate for these issues. I know you can do better. We can't afford to phase out either product".

Suzana knows her numbers are fairly accurate. On a limited sample, she calculated the profitability of Royal and Monalisa using more and different allocation bases. The set of activities and activity rates she chose resulted in numbers that closely approximate those based on more detailed analysis. She is confident that headquarters, knowing that Royal was introduced only recently, will not ask Apple to phase it out. She is also aware that a sizable portion of Frederick's bonus is based on company revenues. Phasing out either product would adversely affect his bonus. Still she feels some pressure from Frederick to do something.

**Required:**

- i. Using activity-based costing (ABC), calculate the profitability of the Royal and Monalisa models. (12 marks)
- ii. Explain briefly why these numbers differ from the profitability of the Royal and Monalisa models calculated using Apple's existing costing system. (8 marks)
- iii. Comment on Frederick's concerns about the accuracy and limitations of ABC. (2 marks)
- iv. How might Apple find the ABC information helpful in managing its business? (2 marks)
- v. What should Suzana do? (1 mark)

**[TOTAL 25 MARKS]**  
Continued ...

**Question 2**

Charmant Bhd prepares its master budget on a monthly basis.

(a) Actual Sales in December last year were RM60,000.

(b) Budgeted sales for January, February, March are:

	Budgeted sales RM
January	70,000
February	85,000
March	90,000

(c) Sales are made 30% for cash, and 70% on credit. All payments on credit sales are collected in the month following the sale. RM42,000 is the balance in accounts receivable at end of December last year.

(d) Beginning inventory at 1<sup>st</sup> January is RM12,600.

(e) The company's gross profit rate is 40%

(f) Monthly expenses are budgeted as follows:

January	RM 32,200
February	RM 25,850

(g) At the end of each month, inventory on hand should equal 30% of the following month's sales needs, stated at cost.

(h) December cash purchases for inventory were RM36,600. Charmant pays for inventory ½ in the current month and ½ in the month following (therefore RM18,300 in January for December last year purchases).

(i) The company is required by its loan covenants to maintain a cash balance of RM10,000. The beginning cash balance on 1<sup>st</sup> January is RM10,000 with no loans outstanding. Finally, loans and repayments of principal must be in multiples of RM1,000. Interest is paid only at the time of repayment of principal.

**Required:**

For the TWO months of January and February:

- (i) Prepare schedule of expected cash collections. (4 marks)
- (ii) Prepare inventory purchases budget. (6 marks)
- (ii) Prepare expected cash disbursements schedule. (3 marks)
- (iii) Prepare Cash Budget. (7 marks)
- (iv) What are some of the behavioral issues that can arise when performance is evaluated by comparing actual results to the budget? (5 marks)

**[TOTAL 25 MARKS]**

Continued ...

**Question 3**

Managers in the Stamping Department have been studying overhead cost and the relationship with machine hours. Data from the most recent 12 months follow.

<u>Month</u>	<u>Overhead (RM)</u>	<u>Machine Hours</u>
January	5,030	2,730
February	1,600	600
March	7,210	3,403
April	4,560	2,200
May	6,880	3,411
June	6,520	2,586
July	6,230	3,364
August	5,570	2,411
September	7,728	3,960
October	5,810	2,897
November	4,580	2,207
December	6,010	2,864

The manager of the department has requested a regression analysis of these two variables (labeled no. 1 below). However, the staff person performing the analysis decided to run another regression that excluded February (labeled no. 2). She observed that the volume of activity was very low for that month because of two factors: a severe flu outbreak and an electrical fire that disrupted operations for about 10 working days.

<u>Regression No. 1</u>	<u>Regression No. 2</u>
Constant 428.00	Constant 550.00
R <sup>2</sup> 0.79	R <sup>2</sup> 0.74
b coefficient 1.86	b coefficient 1.90

**Required:**

- i. Prepare an overhead cost breakdown by using the high-low method. The analysis should be useful in helping to predict variable and fixed costs under normal operating conditions. (10 marks)
- ii. Prepare an estimate of overhead cost for a volume of 3,000 machine hours by using regression no. 1. (3 marks)
- iii. You now have the ability to analyze three cost estimates from the high-low data in part (i) and the two regression equations.
  - (a) Which one do you feel would provide the best estimate? (3 marks)
  - (b) Explain the factors that support your choice.

Note: Do not calculate an overhead cost estimate with regression no. 2 (3 marks)
- iv. List the three cost estimating methods, and for each of them provide a brief description of how the method works. In addition, explain any weaknesses evident in each method. (6 marks)

**[TOTAL 25 MARKS]**

Continued ...

**Question 4**

MI Bhd. is planning to open a noodles restaurant near a new housing development and office park. MI estimates that the neighborhood's fast food market will be RM400,000 per year when the new housing and offices are occupied next year. MI expects to capture 25% of the total neighborhood market unless Mamee also opens a new restaurant in the area. In that case, MI expects to gain only 15% of the market. MI's gross margin ratio is 40%. Its analysts believe there is a 50% chance that Mamee will enter the market. They have prepared the following estimates that they believe are valid for the first 4 years of the investment:

First year's market sales	RM400,000
Annual market growth	10%
Market share without Mamee	25%
Market share with Mamee	15%
Gross margin ratio	40%
Opportunity (discount) rate	8%
Investment cost (at start of project)	RM80,000
Tax rate	35%
Depreciation per year	20,000
Selling, General & Administration (SG&A)	8,000
Probability of Mamee entry	50%

**Required:**

- Prepare NPV calculations assuming that MI can defer its investment decisions one year to resolve uncertainty about Mamee's intentions. (20 marks)
- What does this analysis indicate about the possible effects of Mamee's entry into the market? (3 marks)
- On the basis of this analysis, would you recommend that MI defer its decision? (2 marks)

**[TOTAL 25 MARKS]**

Appendix

## Present Value Tables

<u>Periods</u>	<b>Present Value of \$1</b>									
	<u>4%</u>	<u>6%</u>	<u>8%</u>	<u>10%</u>	<u>12%</u>	<u>14%</u>	<u>16%</u>	<u>18%</u>	<u>20%</u>	
1	.962	.943	.926	.909	.893	.877	.862	.847	.833	
2	.925	.890	.857	.826	.797	.769	.743	.718	.694	
3	.889	.840	.794	.751	.712	.675	.641	.609	.579	
4	.855	.792	.735	.683	.636	.592	.552	.516	.482	
5	.822	.747	.681	.621	.567	.519	.476	.437	.402	
6	.790	.705	.630	.564	.507	.456	.410	.370	.335	
7	.760	.665	.583	.513	.452	.400	.354	.314	.279	
8	.731	.627	.540	.467	.404	.351	.305	.266	.233	
9	.703	.592	.500	.424	.361	.308	.263	.225	.194	
10	.676	.558	.463	.386	.322	.270	.227	.191	.162	

<u>Periods</u>	<b>Present Value of a Series of \$1 Cash Flows</b>								
	<u>4%</u>	<u>6%</u>	<u>8%</u>	<u>10%</u>	<u>12%</u>	<u>14%</u>	<u>16%</u>	<u>18%</u>	<u>20%</u>
1	0.962	0.943	0.926	0.909	0.893	0.877	0.862	0.847	0.833
2	1.886	1.833	1.783	1.736	1.690	1.647	1.605	1.566	1.528
3	2.775	2.673	2.577	2.487	2.402	2.322	2.246	2.174	2.106
4	3.630	3.465	3.312	3.170	3.037	2.914	2.798	2.690	2.589
5	4.452	4.212	3.993	3.791	3.605	3.433	3.274	3.127	2.991
6	5.242	4.917	4.623	4.355	4.111	3.889	3.685	3.498	3.326
7	6.002	5.582	5.206	4.868	4.564	4.288	4.039	3.812	3.605
8	6.733	6.210	5.747	5.335	4.968	4.639	4.344	4.078	3.837
9	7.435	6.802	6.247	5.759	5.328	4.946	4.607	4.303	4.031
10	8.111	7.360	6.710	6.145	5.650	5.216	4.833	4.494	4.192

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